3. The method according to claim 1 in which said restraining step includes securing the core shaft at its ends against lateral movement by capturing the ends of the core shaft in an elongated slot that extends in a direction generally radially of the axis of the drum and provides a pathway for the core shaft with loaded cores thereon to move as the building rolls on said drum increase in diameter.

4. The method according to claim 1 in which the winder has a movable secondary support drum that is movable into contact with building rolls on the cores and in spaced relation to the winding drum, further including the step of bringing the secondary drum into contact with such rolls when the rolls have attained a predetermined diameter while maintaining contact of said driven nip roll with said building rolls.

5. The method according to claim 4 in which the step of restraining said core shaft against lateral movement is terminated following engagement of the secondary drum with the building rolls.

6. The method according to claim 4 in which the nip roll is maintained in contact with the building rolls at least until the secondary drum has come into contact with the building rolls.

7. The method according to claim 1 in which the nip roll is driven at a speed mode prior to the cutting step and is switched to a speed limited adjustable torque mode following the transfer of the webs onto the cores of the core shaft.

8. The method according to claim 6 in which the pressure of the nip roll on the building rolls decreases with increasing diameters of the rolls.

9. The method according to claim 1 including the step of spraying an adhesive on the inside surface of the webs leading to the fully wound rolls immediately prior to said cutting step for simultaneously gluing the tail segments of

the cut webs onto the respective wound rolls and providing an adhesive surface by which the individual webs are attached to the respective cores on the core shaft.

10. The method according to claim 1 in which the secondary support drum is mounted on secondary support arms that operate independently of the primary drum and nip roll, in which the secondary support arms include a core shaft support for receiving the core shaft with partially wound rolls thereon and in which the secondary drum is movable on the secondary arms into contact with the partially wound rolls when the core shaft is so supported on the support arms with the partially wound rolls supported simultaneously between the primary and secondary drums comprising the further step of counter-balancing the weight of said rolls by said secondary drum.

11. The method according to claim 10 in which said further step includes a measurement of the angle of the secondary arms and modifying the counter-balancing force of the secondary drum to prevent excessive bending of the core shaft.

12. The method according to claim 1 further including the step of applying a braking force to the wound rolls through said secondary drum to stop rotation thereof following said transferring step.

13. A drum type winder for continuously winding a split web into large diameter rolls on individual cores carried on a core shaft, comprising a frame, a main winding drum on said frame, a pair of arms mounted on said frame for rotation about an axis in common with the axis of said main winding drum, an elongated core shaft for supporting a plurality of cores thereon, a lay-on roll carried on said arms and engagable with cores on such core shaft, said arms being provided with generally radially extending slots through which the ends of said core shaft extend when a core is received in said slots, said slots defining walls that resist lateral movements of the core shaft ends while permitting rotation of said core shaft on said arms and movement of said core shaft radially of said drum along said slots, said slots being

open at their respective outer radial ends to receive said core shaft therein and having a radial length that permits said core shaft to move radially inwardly to place the cores thereon in engagement with a web carried on the surface of said drum while said cores are simultaneously engaged by said lay-on roll thereby maintaining said core shaft in a generally straight line position for transfer of webs onto cores on said shaft.

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~~14.~~ The drum type winder according to claim ~~13~~ further comprising cams on said frame one each adjacent each of said arms, each of said cams defining a surface positioned generally radially outwardly of said arm slot open ends for supporting said core shaft prior to said core shaft entering said slot open ends.

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~~15.~~ The drum type winder according to claim ~~13~~ further comprising a pair of secondary arms rotatably mounted on said frame, a secondary support drum mounted between said secondary arms, generally radially extending guide ways on said secondary arms supporting said secondary support drum for movement along positions radially of said secondary arms, said secondary support drum being movable by said secondary arms into engagement with building rolls on said core shaft at a position in spaced relation to the engagement position of said main winding drum with said building rolls thereby cradling said building rolls between said drums.

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~~16.~~ The drum type winder according to claim ~~15~~ further comprising cylinders on said secondary arms providing a lifting force to said secondary support drum by which at least a substantial portion of the weight of said building rolls on said core shaft may be supported on said secondary support drum to maintain said core shaft in a generally straight line condition.

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~~17.~~ The drum type winder according to claim ~~15~~ in which said secondary arms are formed with core shaft-receiving notches on the ends thereof into which said core shaft ends may be received after said building rolls have built up to the

point where the core shaft has reached said open ends of said slots in said primary arms, said core shaft and the rolls thereon being movable by said secondary arms about said secondary support drum to a loading position remote from said primary arms.

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18. The drum type winder according to claim 17 further comprising motor drive means for said secondary drum for dynamically braking the rotation of said rolls thereon for unloading built up rolls from said winder.

-CLAIMS-

1. The method of continuously winding split webs onto individual cores carried on a common elongated core shaft into a corresponding plurality of large diameter rolls including transfer of the split webs, substantially at line speed, from fully wound rolls onto such cores, and the start up of winding on such cores while suppressing critical speed limitations due to core shaft deflection, comprising the steps of:

(a) placing the core shaft with cores thereon into surface contact with such split webs supported on a single winding drum and bringing said core shaft and cores thereon up to line speed,

(b) applying a driven nip roll to said cores substantially at line speed and simultaneously restraining the ends of said core shaft against movement lateral to a radius line from the axis of rotation of said drum through said core shaft and,

(c) while said core shaft is so restrained, severing the split webs at positions downstream of the region of contact of said cores with said webs by said drum and simultaneously transferring said webs onto corresponding cores on said core shaft,

(d) and continuing to wind said webs onto said cores while said core shaft is so laterally restrained and further restrained between said driven nip roll and drum and preventing core shaft deflections that would otherwise cause such critical speed limitations.

2. The method according to claim 1 in which core shaft and the cores thereon are brought substantially to web line speed by the driven nip roll prior to contact of the cores with the split webs on the winding drum.